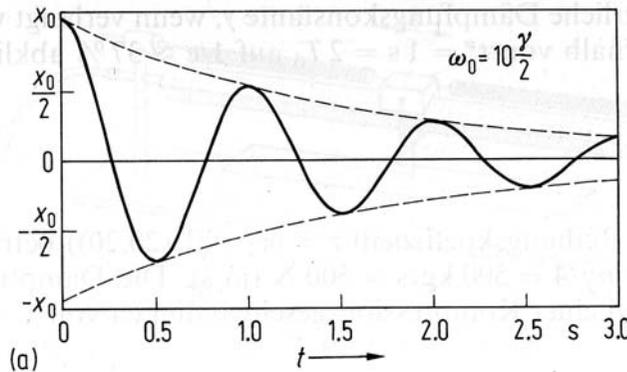


Schwingkreis

*unterkritische
Dämpfung*

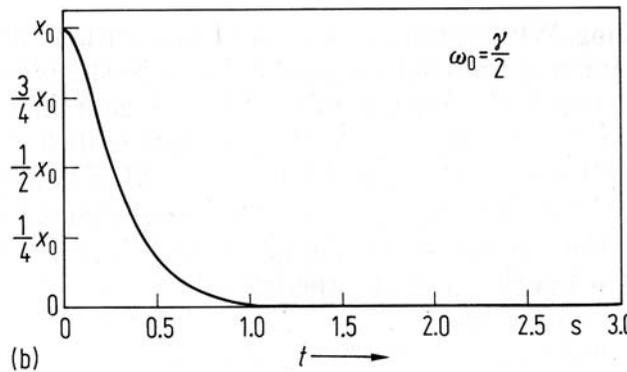


$$\tau^{-1} < \omega_0$$

$$R < 2\sqrt{\frac{L}{C}}$$

$$Q(t) = Q_0 e^{-\frac{t}{\tau}} \left[\cos(\omega t) + \frac{1}{\omega \tau} \sin(\omega t) \right]$$

*kritische Dämpfung
(aperiodischer
Grenzfall)*

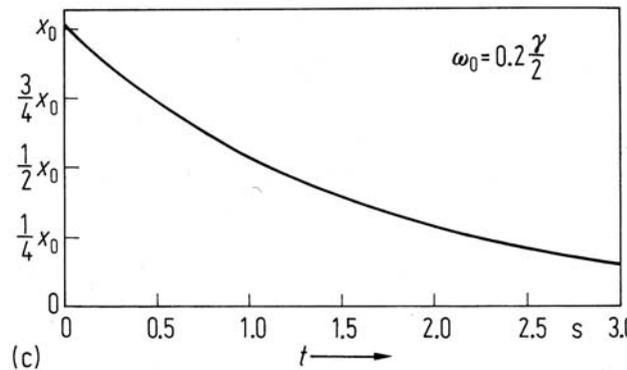


$$\tau^{-1} = \omega_0$$

$$R = 2\sqrt{\frac{L}{C}}$$

$$Q(t) = Q_0 e^{-\frac{t}{\tau}} \left(1 + \frac{1}{\tau} t \right)$$

*überkritische
Dämpfung*



$$\tau^{-1} > \omega_0$$

$$R > 2\sqrt{\frac{L}{C}}$$

$$Q(t) = Q_0 e^{-\frac{t}{\tau}} \left[\cosh(\omega t) + \frac{1}{\omega \tau} \sinh(\omega t) \right]$$